*nstruments* The Magazine of
EASUREMENT and CONTROL
ished Monthly by The Instruments Publishing Company
921 Ridge Ave., Pittsburgh 12, Penna.

# INDEX TO VOLUME 22, 1949


| | Pages |
|---|---|
| ue | |
| ary | 1-92 |
| uary | 93-188 |
| ch | 189-280 |
| l | 281-372 |
| | 373-464 |
| | 465-548 |

| Issue | Pages |
|---|---|
| July | 549-632 |
| August | 633-764 |
| September | 765-864 |
| October | 865-972 |
| November | 973-1072 |
| December | 1073-1168 |


## Subject Index


**A**

ry of Multi-Element Control, The 179
ration Testing Set 45
lute Pressure Recorders and Con-
ollers 816
eration Pick-up 591, 816
System of Remote Indication and its
plication to the Measurement of
quid Pressure and Flow, An 402
elerometer for Aircraft, Panel-type
ecording 728
elerometers, Aircraft 45
elerometers and Pressure Transmitters,
Electrical 761
ylene Plant in the United States,
First High-pressure 494
nators, Air-stream Probe 44
nters for Making Spectrographs Di-
ect-reading 701
justable-speed Drive, Miniature 503
justable-speed Motor Drive 822
E's Award of Edison Medal to Leeds:
Latest Homage to Instrumentation 213
Filters 925
and Gas Filter, Electrostatic 1029
Navigation Program, Modern Air
and Ground Instrumentation in Amer-
ica's 495
Velocity Meter 817
craft Accelerometers 45
craft Navigation Radios 1034
craft Navigation System 45
craft, Panel-type Recording Acceler-
ometer for 728
craft Radio, Multi-purpose 1119
-sizing—Spindle for Shallow Large-
diameter Holes 719
-stream Probe Actuators 44
arm, Combustible-gas 243
arm for Motorboats, Gas 917
arm Silencer 820
ha-particle Counter 236
imeter, Aircraft 152
imeter, Micro-surveying 702
imeter, Surveying 504
itude Controller 1109
itude Standard, Aneroid 816
erican Association for the Advancement
of Science 999
erica's Air Navigation Program, Mod-
ern Air and Ground Instrumentation in
the 495
mere-demand Recorder 410
plifier 144
plifier, Aircraft Control 825
plifier for Aircraft Use 928
plifier, Dynamic Noise Suppressor 156
plifier, High-gain Low-frequency 1019
plifier for Microwave Pulse Amplifica-
tion, Wide-band 1020
plifier and Millivoltmeter, D-C 1118
plifier and Oscillator, Power Supply,
232
plifier, Oscillograph 426
plifier, Wide-band 1023
plifier, Wide-band Chain 237, 944
plifiers, Plug-in 820
alog, Automatic-control 1112
alog Computor Components 915
alysis of Gases Evolved from Metals,
Micro 326
alysis of Stainless and Tool Steels,
Equipment for Two-minute 1113
alytical Balance 816
alytical Instrument, Multi-purpose Pho-
tometric 53
alyzer, Automatic Continuous 408
alyzer, Automatic-control-system 143
alyzer for Automatic-control Systems,
Performance 409
alyzer and Classifier, Metal-parts 52
alyzer, Electrodeposition 238
alyzer, Engine 822
alyzer, Flue Gas 1114
alyzer, Gas & Liquid 917
alyzer, Low-level Circuit 417
alyzer, Power 600
alyzer, Tube 242
alyzer, Ultraviolet Chromatographic 1108
neroid Altitude Standard 816
erma Compass, TV 1120
plication of Feedback Electronic Con-
trol to Automatic Continuous Titration,
An 988
say Equipment, Biological 54
say Instrument, Biological 54
omic Clock, The 133
tenuator, Logarithmic 238
tenuators, Bridged-T 836
tographic Instruments Measure Thermal
Expansion of Earth Materials 168
tographic Torque Magnetometer Aids
Selection of Special-purpose Steels 436
tomatic Computer for Aircraft-motion
Mathematics 69
tomatic Continuous Analyzer 408
tomatic Continuous Titration, An Ap-
plication of Feedback Electronic Con-
trol to 588
tomatic-control Analog 1112
tomatic-control-system Analyzer 143
tomatic Equi-step "Staircase" Method
of Calibrating Voltage-actuated Record-
ers, A New Rapid (millisecond) 41
Automatic Inspection Equipment for Crankshafts 148
Automatic Inspector and Classifier for Bearing Races 819
Automatic Intermittent Volumeter-feeder 42
Automatic Ship-position Plotting System 821
Automatic Titrating System 48

**B**

Balance, Analytical 816
Ballast Tube, TV 523
Baseliner, Model G-1402 246
Bath, Refrigerated 937
Battery Tester, Hearing-aid 1118
Beta-gamma Scaler 48
Beta-ray Thickness Gage 413
Binding Post, Five-way 63
Biological Assay Equipment 54
Biological Assay Instrument 54
Blow Torch 940
Blower, Instrument-cabinet 514
Bridge, Impedance 506
Bridge, Kelvin-Wheatstone 501
Bridge, Portable A-c 509
Bridge, Universal Impedance 831
Bridger, Instrument 600
Buffer Solutions for Calibrating pH Instruments 1015

**C**

Cabinet, Constant Temperature and Humidity 342
Cabinet Dial for Scales, Tape-drive 52
Calculator, Fractions and Decimals 930
Calculator, Hydro-pneumatic Tank 825
Calibrating Hygrometers Below the Freezing-point 221
Calibrating Standards by an Instrument Manufacturer, The Development and Maintenance of 1004
Calibrating Voltage-actuated Recorders, A New Rapid (millisecond) Automatic Equi-step "Staircase" Method of 41
Calibrator, Sweep 1118
Calorimeter, New Flow 349
Camera Accessories, Oscillo-record 236
Camera for CRO 414
Camera, Recording 420
Camshaft Inspection Equipment 52
Capacitance Comparator 592
Capacitance Meter, R-f 240
Capacitors, Ceramic 837, 1130
Capacitors, Laboratory-grade 837
Capacitors, Molded Tubular 836
Capital, Labor and Consumers, Instrumentation's Cost-cutting Functions Benefit 669
Carbon Combustion Furnace 521
Carbon Determinator, Precision 521
Carbon Determinator, Semi-automatic 521
Centralized Organization for Instrument-application Research 1068
Centrifuge, High-speed 600
Chamber, Refrigerated 940
Chamber, Temperature Test 1014
Characteristics of Hair-element Humidity Instruments 798
Charger-reader, Ion Chamber 61
Chart, Metal Recording 145
Chart for "SR-4" Strain-gage-type Pick-ups, Quick Selection 912
Chemical Feeder 1115
Chemical Meter, Stainless 149
Chlorine Dispenser 249
Chlorine Gas Feeder, Gravimetric 921
Chopper, D-c., A-c. 236
Chopper, D-c-to-A-c. 607
Chopper, 60-cycle 501
Chromatographic Analyzer, Ultraviolet 1108
Chronoscope, High-speed 590
Circuit Analyzer, Low-level 417
Circuit Panel Kit 158
Circuit Tester, Visual 1025
Classifier, Centrifugal-type Dust 1014
Cleaning Machine, Instrument Parts 1017
Clutch, Magnetic 331
Clutches, Miniature 1030
Coal Gasification 220
Coal Hydrogenation Process at Louisiana (Missouri) Demonstration Plant, Instrumentation of Federal Bureau of Mines' 572
Coatings, Optical 1132
Coaxial Connector 61
Color Computing Instrument 329
Color Densitometer 247
Color Densitometer for Photography 1111
Color Filters, Coated 409
Color-Temperature Indicator 1116
Colorimeter, Photoelectric 826, 920
Colorimetric Comparator 818
Colorimetry, ICI STandard Observer for 1013
Combination Polyphase Watthour and Thermal Demand Meter 236
Combinations, The Use of Pneumatically-Set Instrument 312
Combustion Boats 522
Combustion Controls To a Process Heater, Experimental Application 529
Combustion Safeguard 922, 1121
Comparator, Spectrogram 918
Comparator, Test Head for Metals 703
Comparator-Densitometer, Film Projection 238
Compass, The Sky 524
Computer for Aircraft-motion Mathematics, Automatic 69
Conductivity Bridge for Hydrochloric Acid 1015
Conductivity Cell 923
Conductivity Cell, Removable 1129
Connector, Coaxial 61
Connectors, Miniature 1129
Connectors, Terminal 342
Constant-altitude Control for Weather Balloons 811
Constant-flow Controller for Jet-engine Fuel 327
Contact-making Instrument 416
Contactor, Reversing 408
Continuous Electronic Water-content Measurements in Oil-field Emulsions 1063
Contour Projector, Miniature 944
Contour-following System 706
Contour-tracing and Projecting Die Checker 916
Control Boards?, "The New Look" in 903
Control of Product Quality by Plant-type Infrared Analyzers 1102
Control, Time-delay Damper 155
Control Valve Body Design 269
Controller, Automotic Temperature 155
Controller, Hydraulic Press 817
Controller for Jet-engine Fuel, Constant-flow 327
Controller, Liquid-level 66, 502
Controller, Multi-switch 500
Controller, Oil-well Drilling 149
Controller, Pressure 1016
Controller, Pyrometer 920
Controller for Steam Return Line Treatment, Automatic 65
Controller, Temperature-time 418
Controllers, Air-operated 1014
Controllers and Receiver-controllers, Pneumatic Transmitters, 917
Coordinatograph or X-Y Recorder 915, 1109
Count Controller 916
Count Recorder, Runnint 144
Counter, Alpha-particle 236
Counter Decades, High-speed 419
Counter, Dual-purpose 924
Counter, Electro-mechanical 57
Counter, Geiger-Muller 511
Counter, High-speed 512
Counter, Magnetic 713
Counter, Magnetic Reset 241
Counter, Mechanical 1138
Counter, Neutron 68
Counter, Non-reset, Magnetic 594
Counter, Photoelectric 598
Counter, Thin Mica Geiger 925
Counter Tube, Mica-window 1126
Counter Tubes, Neutron 1122
Counters, Photoelectric 827
Counters, Radioactivity 719
CRO Tube for Photographic Recording, Blue-screen 703
CRO-display Market 326
Crying Need of Accuracy 395
Crystal Oven 146
Current Indicators 1022
Curricula, The Development of Instrument 752
Cut-off, Low-water 931
Cycle Timer, Multi-circuit, Two-speed-mainshaft 1111

**D**

Damper Control, Time-delay 155
Damper, Pulsation 1026
D-c. Integrator, Sensitive 331
D-c Power Supply 48
Decade Power Resistance Box 592
Degasser, Automatic 1112
Dehumidifier, Instrument-air 414
Dehumidifier, Laboratory 822
Demand Meter, Combination Watthour and Thermal Kva 513
Demonstrator, Radioactivity 146
Densitometer, Color 247
Densitometer, Film Projection Comparator 238
Densitometer for Photography, Color 1111
Density Gage, Continuous-reading Thickness and 1112
Density and Thickness Gages, Radioactivity-principle 820
Desiccator, Metal 504
Development of Instrument Curricula, The 752
Development and Maintenance of Calibrating Standards by an Instrument Manufacturer, The 1004
Dewar Flasks, Stainless-steel 919
Dial Plates, Photographic Type 1036
Diamond Ordnance Laboratory Dedicated, Harry 810
Die Checker, Contour-tracing and Projecting 916
Dielectrometer, Microwave 241, 428
Dielectric-constant Apparatus 926
Differential Pressure Gage, High-sensitivity 68
Diodes, Germanium 1034
Diodes, Sealed-in-glass Germanium 1129
Dispenser, Chlorine 249
Displacement-measuring Pick-up 915
Drafting Instruments 515
Drafting Machine 924
Draftsmen's Template for Ellipses 606
Drawing Instrument, Combination 605
Drill Press, Instrument-shop 242
Drilling Controller, Oil-well 149
Dryer, Instrument Air 933
Dryers, Automatic Compressed-air 43
Dual Variable Resistor 244
Ductility Tester 421
Dust Classifier, Centrifugal-type 1014

**E**

Easily Assembled Console for Rapid Testing of Electrical Indicating Instruments, An 396
Elastic Member With Negative Force Deflection Characteristic 700
Electric Indicating Instrument, Portable 414
Electric Level or Inclinometer with Unique Directional Characteristics, A New 322
Electrical Indicating Instruments 829, 1022
Electrical Instruments, Indicating 67
Electrical Instruments in Magnetic Fields, Performance of Portable 432
Electrical Instruments, Miniature 926
Electrical Instruments, One-inch 44
Electrical Micrometer, Duplex 151
Electrical Tester, Multi-purpose 334
Electrodeposition Analyzer 238
Electrometer, Pocket Chamber 594
Electron Microscope Accessories 1132
Electron Tube, Mechanical-displacement-input 42
Electron Tube, Miniature Industrial 143
Electron-multiplier Photometer 156
Electron-optical Shadow Method for Plotting and Measuring Microscopic Fields 808
Electropneumatic Transducer 150
e/m Ratio 395
Engineering Opportunities in the Field of Instrumentation 31
Engine-indicating System, High-speed Pressure Pick-up and 700
Engine-noise-study Instrumentation 1012
Engraving Machine, Small 517
Exhibit Photographs 904, 905, 906, 907, 908
Experimental Application of Combustion Controls To a Process Heater 529
Exposure Meter for Polaroid Camera 823
Extensometer Continuously Records Percent of Extension on New Strip Temper Pass Mill 226

**F**

Feeder, Automatic Water 924
Feeder, Chemical 1115
Feeder, Gravimetric Chlorine Gas 921
Field Strength Meter 158, 600
Film-flutter and Wow Meter 412
Filter, Electrostatic Air and Gas 1029
Filters, Air 925
Filters, Coated Color 409
Filters for Photography, Coated 1134
Fire Detectors 934
First High-pressure Acetylene Plant in the United States 494
Fixed Gages—Their Design, Application, and Use 1149
Flame Failure Safeguard 142, 344, 823
Flame Safeguard, Gas 427
Flame-failure Safeguards 1026
Flaring Tool 1131
Flight Instruments, Ground "Flight-testing" of 810
Flight Testing of Automatic Cooling Controls 400
Flight Testing the XB-45 Airplane, Instrumentation for 314
Float Switch, Magnetic Proximity 708
Flow Guide 502
Flow Meter with Magnetic Coupling 916
Flow Regulator 927
Flowmeter, Indicating 158
Flowmeter, Purge-rate 57
Flow-rate Indicator 1113
Flow-ratio System for Liquids and Granular Materials 590
Fluxmeter 60
FM Tuners, Fixed-frequency 342
Force Indicator 424
Force-measurement Unit for Dynamometer 1014
Fourth Instrumentation Contest 793, 1009
Fourth National Instrument Conference and Exhibit 683
Fractional Distillation, Vacuum Adapter for 62
Frequency Standard 1117
Frequency Standard Interpolating 509
Frequency Standards, Secondary 1117
Frequency-monitoring System for Interval Timers 1012
Furnace, Carbon Combustion 521
Furnace, Temperature-standard 1113
Furnaces, Laboratory 716
Furnaces, Muffle 518
Fuse Holder, Instrument 832
Fuse and Resistor Locks 836

**G**

Gage Blocks 423
Gage, Coating-Thickness 332
Gage, High-pressure 509
Gage Illuminators 823
Gage, Indicating Snap 821
Gage Lab. at Stanford Research Institute 346
Gage-lines, Instruments, etc., Line-type Thermostated Heater for 1131
Gages, Dial-bore 245
Gages—Their Design, Application, and Use, Fixed 1149
Gaging Combined with Automatic Loading, Semi-automatic 144
Gaging Machine, Cylinder-block 334
Gamma-ray Detection Tube 710
Gas Alarm for Motorboats 917
Gas Detector, Combustible 597
Gas & Liquid Analyzer 917
Gas Regulator, Multi-purpose 148
Gas-analysis Units 914
Gases Evolved from Metals, Micro Analysis of 329
Gases, Methods of Minimizing Errors in the Measurement of High Temperatures in 122
Gasometer, Precision 1109
Gas-temperature Indicator, High- 1016
Gear Gage, Pocket-size 416
Geiger Counter, Thin Mica 925
Geiger-Muller Counter 511
Geiger-Muller Scaler 510
Generator, Harmonic 1020
Generator, Noise 506
Generator, Signal 1024
Generator, Standard-signal 1121
Generator, Sweep Signal 245
Generator, Ultrasonic 340, 921
Germanium Diodes, Sealed-in-glass 1129
Glass-pipe Coupling 938
Governor for Instrument-mechanism Speed 146
Graphic Panel, Process Control By 1074
Grid Bias Cell, Miniature 522
Ground "Flight-testing" of Flight Instruments 810
Ground-Testing Turrets Fire-Control Equipment 811
Growth of an Industry, The 214
Gyros, Rate and Position Telemetering 327

**H**

Hardness Test Blocks 516

Hardness Tester, Micro 326
Hardness Tester, Portable 238, 240
Hardness Testers, Steel-ball Penetrators for Rockwell 824
Harmonic Generator 1020
"Heat Inertia" in Problems of Automatic Control of Temperature 136, 222, 324, 406
Heater for Gage-lines, Instruments, etc., Line-type Theromostated 1131
Heaters, Instrument 330
Heating Jackets With Safety Thermostats 343
Height Gage Vernier 596
Height Instrument, Multi 143
High-altitude Aircraft, D-c. Relay 238
High-sensitivity Differential Pressure Gage 68
High-speed Pressure Pick-up and Engine-indicating System 700
Hot Plate, Laboratory 822
Housings, Instrument 935
Humidity Indicator, Fan Attachment for 704
Humidity Indicator, Temperature and 1108
Humidity Instruments, Characteristics of Hair-element 798
Humidity Recorder, Temperature and 1111
Humidity-temperature Indicator 595
Hydraulic Boost Pump and Power Unit 704
Hydraulic Operating Valve 159
Hydraulic Scales 502
Hydro-pneumatic Tank Calculator 825
Hydrostatic Impulse Gage 56
Hygrometers Below the Freezing-point, Calibrating 221

I

ICI Standard Observer for Colorimetry 1013
ICS Adds Course in Industrial Instrumentation 858
Identification Sleeve, Plastic 1126
Illuminators, Gage 823
Impedance Bridge, Universal 831
Impedance-phase Angle Meter 53
Impulse Gage, Hydrostatic 56
Inclined-tube Pressure Gage, Miniature 147
Inclinometer with Unique Directional Characteristics, A New Electric Level or 322
Indoor-outdoor Thermometer 55
Infrared Analyzers, Control of Product Quality by Plant-type 1102
Infrared Spectra for Quantitive Analyses, A Rapid Automatic Method of Computing 497
Inspection Equipments, Automatic 52, 148
Inspection Kit for Lockbolts 717
Inspection Plate, Layout and 333
Inspector and Classifier for Bearing Races, Automatic 819
Inspector for Connecting Rods 1028
Inspector-classifier, Automatic Piston 66
Instrument Air Dryer 933
Instrument Air-Dryer and Filter 415
Instrument Bridger 600
Instrument Engineering, Organized 755
Instrument Fuse Holder 832
Instrument Housings 935
Instrument "Road Show" 70
Instrument Servomechanisms 42
Instrument Shop Tools 1057
Instrument Transformers, High-precision 500
Instrument Trouble-Shooter, The 36
Instrument-air Cleaner 604
Instrument-air Dehumidifier 414
Instrument-application Research, A Centralized Organization for 1098
Instrumentation Contest, Fourth 793
Instrumentation By and With Controlled Volume Pumps 442
Instrumentation of Federal Bureau of Mines' Coal Hydrogenation Process at Louisiana (Missouri) Demonstration Plant 572
Instrumentation for Flight Testing the XB-45 Airplane 314
Instrumentation Flow Plan Symbols 963
Instrumentation Helps Cut Pattern of Know-How for New Fuels-from-Coal Industry 570
Instrumentation, ICS Adds Course in Industrial 858
Instrumentation Modernizes Industry and Creates New Industries 491
Instrumentation Problems of Deep-Sea Oceanographic Exploration, Principal 898
Instrumentation, Simplified 670
Instrumentation's Cost-cutting Functions Benefit Capital, Labor and Consumers 669
Instrumentation's Foe: Statism 121
Instrument-cabinet Blower 514
Instrument-shop Drill Press 242
Instrument-shop Tools 49
InstruMerriment 172, 348, 438, 810
Insulation Tester, A-c 143
Insulation Tester, Dual-voltage 508, 1120
Integrator, Sensitive D-c 331
Interdependence of Properties and Characteristics 1097
Internal-measurement Attachment for Micrometer 416
International Temperature Scale, New 228
Interrupter Machine, Motor-driven 1111
Inverse Derivative—A New Mode of Automatic Control, The 216
Ion Chamber Charger-reader 61
Iron-Constantan Curve Revision 395

J

Jackets With Safety Thermostats, Heating 343
Jet-engine Research Aided by Electron Diffraction 525
Journal of the Instrument Society of America 73, 177, 267, 353, 441, 527, 617, 751, 857, 957, 1049, 1145
Journal of the Southern California Meter Association 1063, 1155

K

Kelvin-Wheatstone Bridge 501
Keynote, Productivity: Mood, Earnestness 897
Kilovoltmeter 253
Kilovoltmeters, Multi-range 67
Kilovoltmeters, Range Extending Device for Portable 828
Kit, Circuit Panel 158
Kva Demand Meter, Combination Watthour and Thermal 513

L

Laboratory Instruments, Metal-cased 142
Laboratory Refrigerator 240
Laboratory Standard Type Communications Receiver 707
Labor-union officials 999
Layout and Inspection Plate 333
Lead-in-Air Spectroscope-Detector, Ultrasensitive 172
Leak Detector 824
Leak-detector Sampling Probe 502
Leather Thickness Measure 412
Lens Calibrator 1111
Let No One Misinterpret INSTRUMENTS' Anti-Socialism 311
Light Rays Can Be Tools 1050
Lighting Control, Street 412
Lightmeters for Use by Non-Experts, New 168
Line, Slotted 146
Liquid Meter, Stainless, for Chemicals 119
Liquid-level Controller 66, 502
Liquid-level Indicating System, Multipoint 817
Liquid-level Measuring and Control System 817
Load and Pressure Cells 1101
Load Recorders and Controllers for Mixing Machines 914
Load Visualizer, A-c. 717
Logarithmic Attenuator 238
Low-water Cut-off 931

M

Machine-tool Movement Micrometer 45
Magnet, Multi-purpose 504
Magnetic Clutch 331
Magnetic Fluids Find New Instrumentation Uses 809
Magnetic Method for Measuring the Thickness of Composite Copper-nickel Coatings, A New 323
Magnetic Test Set 49
Magnetic-tape Recorder 328
Magnetometer 591
Magnetometer Aids Selection of Special-purpose Steels, Autographic Torque 436
Magnifier, Desk or Bench 946
Magnifier, Inspection 592
Magnifiers, Inspection 592
Manometer, Absolute and Differential 1115
Manometer, Direct-reading 237
Manometer, High-precision Dial 326
Manometer, Portable Field 1114
Marker Generator 715
Markers, Terminal 522
Measurement and Control at Trona 1155
Measurement of Proton's Magnetic Moment Will Improve Instruments and Servos 430
Measuring Machine 409
Measuring Piston Temperatures, New Technique for 170
Mechanical-displacement-input Electron Tube 42
Melting-point Apparatus 338
Mercury Cleaning Equipment 942
Mercury Still 916
Metal-cased Laboratory Instruments 142
Metal-parts Analyzer and Classifier 52
Metals Comparator Test Head for 703
Metering Open-Hearth Oxygen 32
Method of Computing Infrared Spectra for Quantitative Analyses, A Rapid Automatic 497
Methods of Minimizing Errors in the Measurement of High Temperatures in Gases 122
Methods of Speed Control for Testing Machines 495
Micro Analysis of Gasses Evolved from Metals 320
Micro Hardness Tester 326
Microammeter, D-c. 590
Microburette 143
Micrometer, Duplex Electrical 151
Micrometer Head 717
Micrometer, Internal-measurement Attachment for 416
Micrometer, Machine-tool Movement 45
Micrometers, Inside 719
Microphotometer 1114
Microsectioning, NBS Method for 811
Microscope Attachment, Triple-duty 701
Microscope, Industrial 1017
Microscope, Laboratory 409
Microscope, Profile-measuring 408
Micro-switch, Heavy-duty 415
Microvoltmeter Component, H-f. 418
Microwave Electrometer 241, 428
Microwave Meter 506
Microwave Power Meter 240
Millivoltmeters for Thermocouples, Temperature-calibrated 236
Miniature Portable Cathode-ray Oscillograph Recorder, A 800
Mixer, Laboratory 922
Mixing Machines, Load Recorders and Controllers for 914
Moisture Meter for Lumber 702
Moisture Meter, Peanut 1121
Molecular Still 54
Monochromatic Light and Optical Flat 1015
Monochromator, Universal 1108
Motor, Instrument 833
Motor, Instrumentation 1015
Motor, Three-speed Synchronous 513
Motor, Timing 930
Motor-control System, Electric 45
Motor-control System, Variable-speed 514
Motors, Timers, D-c. 337
Multi-channel Mechanical Switch 239
Multi-channel Switch 248
Multi-Element Control, The ABC's of 179
Multi-range Electrical Tester for Corrosion, etc., Studies 1023
Multi-signal Systems 326
Multiplier, Phototube 935
Multiplier for VTVM, D-c. Voltage 64
Multiplier, V. U. Instrument 64
Multi-purpose Electrical Tester 50, 51
Multi-purpose Height Instrument 143
Multi-purpose Photometric Analytical Instrument 53
Mutual Conductance Tube Tester 930
Mutual Exclusiveness of Properties and Characteristics 1097

N

Nameplates, Instrument 1127
Naval Ordnance Laboratory, Non-destructive Testing Featured by New 730
Navigation System, Aircraft 45
NBS Gets G-E Precision Power-supply Equipment 809
NBS Method for Microsectioning 811
Negator 700
Neutron Counter 68, 702, 1122
Neutron Sources, Radium-beryllium 251
New Electric Level or Inclinometer with Unique Directional Characteristics, A 322
New Fuels-from-Coal Industry, Instrumentation Helps Cut Pattern of Know-How for 570
New Industries, Instrumentation Modernizes Industry and Creates 491
New Magnetic Method for Measuring the Thickness of Composite Copper-nickel Coatings, A 323
New Method of Expanding the Scale of a Magnetic Oscillograph 405
New Method of Measuring Wear of Textiles 724
Nil-pressure Switch 410
Nitrogen Dioxide Detector 823
Noise Generator 506
Noise Meter, FM-TV 249
Noise Meter, Phonograph Disk 832
Noise Suppressor Amplifier, Dynamic 156
Noise Suppressor, Dynamic 1021
Noise and Vibration Measuring System 341
Non-destructive Testing Featured by New Naval Ordnance Laboratory 730

O

Oceanographic Exploration, Principal Instrumentation Problems of Deep-sea 898
Ohmmeter 820
Oil Burner Adjusting Kit 54
Oil-field Emulsions, Continuous Electronic Water-content Measurements in 1063
Oil-well Drilling Controller 149
Opportunities in the Field of Instrumentation, Engineering 31
Optical Coatings 1133
Optical Flat, Monochromatic Light and 1015
Organization of an Instrument Department 1001
Organized Instrument Engineering 755
Oscillator, UHF 1118
Oscillator, Wide-range 63, 830
Oscillator, Wide-range Power 1118
Oscillograph Amplifier 426
Oscillograph Assembly, Pen-writing 500
Oscillograph, 5-in. Laboratory 412
Oscillograph, New Method of Expanding the Scale of a Magnetic 405
Oscillograph Recorder, A Miniature Portable Cathode-ray 800
Oscillograph Tube 60
Oscillograph Tube, Three-inch 828
Oscillo-record Camera Accessories 256
Oscilloscope, Cathode-ray 1119, 1120
Oscilloscope, Dual-channel 1021
Oscilloscope, Low-frequency Cathode-ray 710
Oscilloscope, Portable Projection 412
Oscilloscope and Sweep Generator, Combination C-r. 145
Oscilloscope Time Calibrator 600
Oven, Crystal 148
Oven, Laboratory 156, 518
Oxygen Meter 409

P

Pen Recorder 923
Performance of Portable Electrical Instruments in Magnetic Fields 432
Personnel Training Program in a Modern Chemical Plant, Instrument 1146
pH Electrodes 1024
pH in Industry, Application Factors Affecting the Regulation of 579, 680, 804, 910, 1010, 1107
pH Instruments, Buffer Solutions for Calibrating 1015
pH Meter for Graphic Industries 592
pH Scale, Standardization of the 219
Phase Meter 506
Phase Meter, Antenna-system 599
Phase Meter Makes Possible World-wide Navigation Systems, New "Two-method" 40
Photocells, Selenium 519
Photoelectric Control 151, 595, 1027
Photographic Tape Recorder 43
Photographic Type Dial Plates 1036
Photometer, Electron-multiplier 156
Photometer, Exposure 702
Photometric Analytical Instrument, Multipurpose 53
Phototube, Multiplier 935
Physical Principles of Vacuum Measurement and Production 33
Pick-up, Displacement-measuring 915
Pick-ups, Tension and Compression 251
Pilot Plant for Research on Coal Industry's Future 220
Piston Temperatures, New Technique for Measuring 170
Pittsburgh Plate Glass Company 679
"Plan Your St. Louis Trip Now!" 569
Plant Instrument Shop Testing Equipment 794
Plug Gages, Chrome 48
Pneumatic Circuits Make Simple Standard Devices Perform Extraordinary Jobs, Unorthodox 675
Pneumatic Transmission Lag 618
Pneumatic Transmitter 916
Pneumatic Transmitter, Controllers and Receiver-controllers 917
Pneumatically-Set Instrument Combinations, The Use of 312
Polar Recording Instrument 708
Polarographic Analysis Equipment 932
Porcelain Enamel Adherence Tester 346
Positioner, Control-valve 936
Postwar Radar 1012
Potential Source, Standard 829
Power Meter, Microwave 240
Power Supply, A-c. 237
Power Supply, Amplifier and Oscillator 237
Power Supply, D-c. 423, 60[illegible] 1024
Power Supply, High-precision [illegible]
Power Supply, Klystron 703
Power Supply, Regulated 143
Power Supply, Regulated D-c. [illegible]
Power Supply, Reversible-[illegible]
Power Supply, R-f. 828
Power Supply, TV 928
Power Supply, Twin 512, 929
Power Unit 1136
Power Unit, Hydraulic Boost [illegible]
Power Unit, Stroke-type Elec[illegible]
Pre-amplifier, Calibrated 1025
Precision Laboratory Thermo[illegible]
Pressure Cells, Load and 1110
Pressure Controller 1016
Pressure Gage 827
Pressure Gage, Miniature In[illegible] 147
Pressure Gage, Sensitive Air-[illegible]
Pressure Pick-up and Engine [illegible] System, High-speed 700
Pressure Pick-ups for Aircraft [illegible] siles 59
Pressure Recorders and Contr[illegible] solute 816
Pressure Regulator, Vacuum 41[illegible]
Pressure, Some Problems in t[illegible] Measurement of 355
Pressure Switch 147
Pressure Transmitter, Electric[illegible]
Pressure Transmitters, Electric[illegible] ometers and 701
Pressure-gage Bleeder 1027
Primary High-frequency Voltag[illegible] ard, A 318
Probe, magnetic 504
Process Control by Graphic Pan[illegible]
Process Control, Valve Charact[illegible] and 75
Processes Completely Automatized i[illegible] PPG Chemical Plant 679
Proficient Priests of Precision: Pra[illegible] Practical Progress 395
Profile-measuring Microscope 408
Program Controller for a Battery of [illegible] chines, etc. 1110
Projector, Miniature Contour 944
Proton's Magnetic Moment Will Im[illegible] Instruments and Servos, Measure[illegible] of 430
Pump for Instrument-controlled Pr[illegible] 153
Pump for Temperature-controlled R[illegible] etc. 922
Purge-rate Flowmeter 57
Pyrometer, Adjustable-mounting 15[illegible]
Pyrometer, Diesel Exhaust 590
Pyrometer Indicator, Multiple-point
Pyrometer, Open-hearth Optical 414
Pyrometer, Radiation 1015
Pyrometer, Surface and Immersion
Pyrometers, Multi-circuit 914

Q

Quality by Plant-type Infrared Analy[illegible] Control of Product 1102

R

Radar Idea, X-ray Movies Use 69
Radiation "Area Sources" 926
Radiation Counter 594, 1123, 1124,
Radiation Detector 1125
Radiation Detector, 2-lb. 828
Radiation Instruments for Army Tra[illegible] Use, Standardized 902
Radiation Shield 711
Radiation Survey Meter 338, 924,
Radiation-detection Densitometer 11[illegible]
Radio Remote-control Unit 44
Radio Transmission Measuring Set
Radioactivity Counters 719
Radioactivity Demonstrator 146
Radioactivity Detector, Portable 511
Radioactivity Instrumentation Assem[illegible] 510
Radioactivity Meter 511
Radioactivity Scaler and Ratemeter
Radioactivity Survey Meter 1122
Radiochemical Laboratories 700
Radio-frequency Mass Spectrometry [illegible] Promising New Analytical Method
Radium-beryllium Neutron Sources
Range Extending Device for Portable [illegible] ovoltmeters 828
Rapid Automatic Method of Comput[illegible] Infrared Spectra for Quantit[illegible] Analyses, A 497
Rapid (millisecond) Automatic Equi[illegible] "Staircase" Method of Calibrating [illegible] age-actuated Recorders 41
Rate and Position Telemetering Gyro[illegible]
Receiver, Laboratory Standard Type [illegible] munications 707
Recorder, Coordinatograph or X-Y [illegible] 1109
Recorder, High-speed Multi-point 91[illegible]
Recorder, Magnetic-tape 328
Recorder Pen 923
Recorder, Photographic Tape 43
Recorder, Refractive-index 1109
Recorder, Sulphur-compounds 1014
Recorder, Twin 917
Recorder, Variable-chart-speed 237
Recorders, Miniature 1016
Recorders, Temperature and Pressure
Recording Chart, Metal 145
Recording Instrument, Polar 708
Rectifier, High-voltage Selenium 240
Rectifier, Peak Voltmeter 1022
Rectifier Tube, High-vacuum 1029
Rectifiers for Battery Charging, Sele[illegible] 833
Rectifiers, Grid-controlled 1136
Rectifiers, Miniature Selenium 1136
Rectifiers, Selenium 246, 413, 1032
Reflectoscope 1114
Refractive-index Recorder 1109
Refractometer 323
Refractometer, Dipping 919
Refractometer, Hand 1015
Refrigerator, Laboratory 240
Regulation of pH in Industry, Some [illegible] plication Factors Affecting the 579, 804, 910, 1010, 1107
Regulator, Multi-purpose Gas 148
Regulator, Oil-burner 1115
Regulator, Rheostatic 146
Regulator, Voltage 248
RELAYS: A-c. 1026; A-c. or D-c.
Aircraft Type 833; General-purpose

-altitude Aircraft D-c. 238; for High- Telegraphy, Polarized 243; Midget 538, 605; Midget Antenna 883; ature 1031, 1133; Power 833; Pro- nal Time Delay 148; Temperature- ensated 519; Torque-type 835; Valve Panel, Instrument 1036; Aircraft r-type 419; Hermetically-sealed 604; locking 603; Multi-pole 1032
Indication and its Application to Measurement of Fluid Pressure and ow, An A-c. System of 402
ute-control Unit, Radio 44
stance Box, Decade Power 592
stance Tester, Low- 1118
stance Thermometers, Long-stem 1113
stance-thermometer Assemblies 43
stance-thermometer Bulb 42, 332
stance-thermometer Bulb for Tele- eting 1108
stance-thermometer Elements, High- mperature 914
stor, Differential Computing Voltage- ding 1132
stor, Dual Variable 244
stor, Fixed-composition 52
stor, High-voltage 144
stor, Voltage-dividing 931
stors, Carbon 246
stors, High Current 1131
stors, Midget Wire-wound 837
stors, Thin-type 520
stors, Voltage-dividing 1030
stors, Tuning-fork 923
Z-angle Meter 143
stat, Miniature Multiturn 328
static Voltmeter 146
Show", Instrument 70
land Instrument Men Show Metering rinciple 349
Recorder for Shipping 1117
t Applications of Electrostatic Gen- ating Voltmeters 1007
meter, Multi-flow 594
meters, Laboratory 708
chness Recorder, Tracer for Internal- rface 43
6-ft. Folding 504
ning Count Recorder 144

S

y Shut-off, Combined Room Thermo- t and Pilot-type 142
y Valves With Bellows Seal Feature 9
ler for Dust and Smoke Measure- ents, Electrostatic 819
rable-core Reactors 816
e for Cranes and Hoists 147
e, Tension 426
er, Automatic 510
er, Beta-gamma 48
er, Geiger-Muller 510
er, Hydraulic 502
rs, Tape-drive Cabinet Dial for 52
tor Valve, Dual-pressure 146
i-automatic Gaging Combined with tomatic Loading 144
chanism "Breadboards" for Ex- rimental Purposes 591
chanisms, Instrument 42
motor 591
motor, A-c. 422
motors, Rotary 1031
position Plotting System, Automatic
Testing Equipment, Plant Instru- nt 794
Tools, Instrument Shop 1057
al Generator, FM-AM 506
al Generator, High-frequency 330
al Generator, Standard- 1121
ified Instrumentation 670
Compass, The 524
e Rule, Six-inch 16-scale Log-log
ed Line 146
l control of Natural Gas 69
e Density Indicator and Control 410
e Density Meter 62
e Indicator 596, 915
e Indicator, Photoelectric 244
alism, Let No One Misinterpret STRUMENTS' Anti- 311
et, Thermostat-bulb 924
ets, Miniature 1132
ering Gun, Heavy-duty 834
ering Pencil-iron 936
noid-controlled Air-powered Air lve, High-speed 154
e Application Factors Affecting the gulation of pH in Industry 579, 680, t, 910, 1010, 1107
e Problems in the Precise Measure- ent of Pressure 355
and Pressure Meter 416
and-pressure Measuring Equipment 918
re Unit, Spark-arc 701
thern California Meter Association 801
trochemical Equipment 1113
trogram Comparator 918
trograph Source Unit 823
trographs Direct-reading, Adapters for aking 701
trophotometer 710
troradiometer, Recording 1112
troscopy Speeds Routine Stainless- eel Analyses 232
trum Visualizer, Voice 926
ed Control for Testing Machines, Methods of 495
ed Control Unit, Continuously-variable otor- 491
ed Controller, Automatic 411
ed Controller, Motor 1122
ed Drive, Miniature Adjustable- 503
ed, Governor for Instrument-mecha- sm 146
ed Motor Drive, Adjustable- 822
ed Motor-control System, Variable- d
ed-control Component 917
dlight, Miniature 152
ing Tester 825
ndard Cell, Electronic 1022
ndard Potential Source 829
ndardization of the pH Scale 219
ndardized Radiation Instruments for rmy Training Use 902
ndards by an Instrument Manufac- urer, The Development and Mainte- nance of Calibrating 1004
Standing Wave Indicator 148
Stanford Research Institute, Gage Lab. at 346
Starters, Reversing 515
Start-ups and What They Can Teach the Instrument Engineer, Unit 1100
Statism, Instrumentation's Foe: 121
Steam Purity, Continuous Sampler for 112
Steam Return Line Treatment, Automatic Controller for 65
Steam Trap, Automatic 516
Steel-ball Penetrators for Rockwell Hardness Testers 824
Stepping Switch, Automatic 59
Stepping Switch, Spring-driven 58
Still, Mercury 916
Still, Molecular 54
Still, Othmer 712
Stills, Laboratory Water 820
Stirrer, Magnetic 822
Strain Gage, Magnetic 142
Strain Indicator 1018
Strain Recorder 1110
Strain-gage-type Pick-ups, Quick-selection Chart for "SR-4" 912
Stroboscope, Slow-speed 504
Sulphur-compounds Recorder 1014
Surface-roughness Comparator 411
Surveying Altimeter 504
Sweep Calibrator 1118
Sweep Generator 832
Sweep Generator, Audio 946
Sweep Generator, Combination C-r. Oscilloscope and 145
Sweep Generator, TV-FM 830
Sweep Signal Generator 245, 335
Sweeping Oscillator 831
Switch for Cranes and Hoists, Overload 929
SWITCHES: Lever-action 938; Limit 835; Magnetic Proximity Float 709; Miniature Multi-deck Tap 834; Momentary-contact Push-button 706; Motor-driven 1032; Multi-channel 248; Multi-channel Mechanical 239; Nil-pressure 410; Pressure 147, 1134; Rapid-commutating Rotary 592; Scaled-plunger Snap-acting 834; Splash-proof Precision 938; Thermal 425; Waterproof 934; Coaxial 512; Thermostatic 1028

T

Tachometer 592
Tachometer and Cutmeter, Portable Electric 1016
Tachometer, Hand 65
Tachometer, Miniature 915
Tachometer, Precision High-speed 821
Tape-drive Cabinet Dial for Scales 52
Technical Societies 351, 607, 732, 812, 948, 1142
Temperature Alarm System, Bearing 339
Temperature Controller 344, 1110
Temperature Controller, Automatic 155
Temperature Controller, Motorized-valve 236
Temperature and Humidity Indicator 1108
Temperature and Humidity Recorder 1111
Temperature Indicator, High-gas- 1016
Temperature Indicators 157
Temperature Scale, New International 228
Temperature Transmitter 408
Temperature-time Controller 418
Tensile Tester, Portable 918
Tensile Testing Equipment, Autographic 328
Tensiometer, Yarn 822
Tension and Compression Pick-ups 251
Tension Scale 426
Terminal Blocks, Sectional 933
Test Panel, Instrument Relay Valve 1036
Test Set, Magnetic 49
Test Set, Transformer Turn Ratio 55
Test-equipment Rack 600
TESTERS: A-c. Insulation 143; Battery 410; for Components, Fatigue 237; for Corrosion, etc., Studies, Multi-range Electrical 1023; Dual-voltage Insulation 508; Ductility 421; Hardness 153; Low-resistance 1118; for Metals, Ultrasonic-principle 1114; Microhardness 722; Multi-purpose Electrical 50, 51; Mutual Conductance Tube 930; Porcelain Enamel Adherence 346; Portable Hardness 238, 240; Storage Battery 238; Universal 720; Visual Circuit 1025
Testing of Electrical Indicating Instrument, An Easily Assembled Console for Rapid 396
Testing Fixtures, Wood 714
Testing Machine, Low-range 818
Testing Machine, Relaxation 819
Testing Machine, Wire Fatigue 43
Testing Set, Abrasion 45
Tetrode, VHF Power 523
Texas A&M's Fourth Annual Short Course 1000
Textiles, New Method of Measuring Wear of 724
"The New Look" in Control Boards? 903
Thermal Expansion of Earth Materials, Autographic Instruments Measure 168
Thermal Radiation Measurements, Thermocouple Assembly for 330
Thermal Switch 425
Thermal Watt Demand Meter, Combination Watthour and 44
Thermocouple Assembly 43
Thermocouple Assembly for Thermal Radiation Measurements 330
Thermocouple Indicator 501
THERMOMETERS: Dial-type Immersion 501; Electrical 238; Elements, High-temperature Resistance-914; Indoor-outdoor 55; Metal-bulb and Glass-tube 501; Package 1016; Precision Laboratory 802; Surface 820; Surface 332; Testing 501
Thermoscopic Crayons and Pellets 502
Thermoscopic Materials 157
Thermostat 817
Thermostat and Pilot-type Safety Shut-off, Combined Room 142
Thermostat, Strip-type Shockproof 341
Thermostat, Timer 711
Thermostat-bulb Socket 924
Thermostats, Snap-action 715
Thickness of Composite Copper-nickel Coatings, A New Magnetic Method for Measuring the 323
Thickness and Density Gage, Continuous-reading 1112
Thickness Gage, Beta-ray 413
Thickness Gage, Coating- 332, 421
Thickness Gage, X-ray 1114
Thickness Gages, Radioactivity-principle Density and 820
Thickness Measure, Leather 412
Thyratron 1028
Time Delay Relay, Proportional 148
Time Recorder 517
Time-constant Selection in the Application of RC Differentiating and Integrating Circuits 1106
Time-in-process Recorder 142
Time-interval Counter 918
TIMERS: A-c.-powered 342; Automatic 55, 244, 252; Electronic 1134; Interval 339; Mechanical 513; Repeat Cycle 425; Sequence Weld 410, 918; Thermostat 711; Cycle 424; D-c. Motors, 337; for Hazardous Locations 821
Timing Motor 930
Timing Motor, D-c. 410
Timing-mark Generator 601
Titrating System, Automatic 48
Titration, An Application of Feedback Electronic Control to Automatic Continuous 588
Titration Recorder 1111
Titrator, Semi-automatic 1112
Tools, Instrument-shop 49
Torque Analyzer 918
Torque Measurement Stands 337
Tracer for Internal-surface Roughness Recorder 43
Training Program in a Modern Chemical Plant, Instrument Personnel 1146
Transducer, Electropneumatic 150
Transformer, Constant-voltage 1113
Transformer, Split-core 606
Transformer Turn Ratio Test Set 55
Transformers, High-precision Instrument 500
Transformers for Instrumentation Uses 1118
Transmitter, Electrical Pressure 49
Transmitter, Pneumatic 916
Transmitters, Controllers and Receiver-controllers, Pneumatic 917
Triode, Power 601
Tristimulus Integrator 329
Trona, Measurement and Control at 1155
Trouble-Shooter, The Instrument 36
Tube Expander 428
Tube, 150-kv. X-ray 250
Tube, TV Ballast 523
Tube, Ultra High-frequency 56
Tuners, Fixed-frequency FM 343
Tuning-fork Resonators 923
TV Linearity Pattern Generator 926
TV Power Supply 928
TV Probe, High-voltage 428
TV Sweep Marker 1018
TV Test Instruments 1020
"Two-method" Phase Meter Makes Possible World-wide Navigation Systems, New 40

U

UHF Analyzer 832
UHF Interpolator 509
Ultra High-frequency Tube 56
Ultrasensitive Lead-in-Air Spectroscope Detector 172
Ultrasonic Analyzer 832
Ultrasonic Generator 340, 921
Ultraviolet Chromatographic Analyzer 1108
Unit Start-ups and What They Can Teach the Instrument Engineer 1100
Unorthodox Pneumatic Circuits Make Simple Standard Devices Perform Extraordinary Jobs 675

V

Vacuum Adapter for Fractional Distillation 62
Vacuum Gage, Wide-range 142
Vacuum Measurement and Production, The Physical Principles of 33
Vacuum Pressure Regulator 412
Vacuum Pump, Oil-diffusion 590
Vacuum-control Switch 821
Vacuum-pressure Leak, Adjustable 501
Vacuum-tube Voltmeter 336, 508
VALVES: Air or Water Operating 503; Characteristics and Process Control 75; Continuously-connected Handwheel 1127; Dual-pressure Selector 146; 8-in. x 10-in. Safety-relief 720; Electric-diaphragm Gas 236; Fuel Shut-off 715; High-pressure Continuous-duty Solenoid 716; High-speed Solenoid-controlled Air-powered Air 154 Hydraulic Operating 159; Hydraulic Sequence 422; for Hydraulic Service, 50-psi. 420; Manual Control 336; Motor-driven Dual 707; Pressure-reducing 42; Pressure-regulator 828; Relief 822; Reversible Control 1128; Rubber-lined 1031; Selecting Computer 606; Solenoid 1128; Three-way Pneumatic 704; Zeolite Control 63; Air-operated Butterfly 1029; With Bellows Seal Feature, Safety 149; Control 937; Double-solenoid 934; Electro-pneumatic Solenoid 932; Forged Steel Instrument 1129; High-pressure Diaphragm-motor 819; Low-pressure Diaphragm-motor 818; Packless 58, 237; Solenoid 713; Solenoid-operated 427; Three-way Air 942; Three-way Solenoid 826
Variable-chart-speed Recorder 237
Venturi Tubes, Small-size 252
Vibration Detector, Portable 326
Vibration Frequency Pick-up 1016
Vibration Integrator, Pick-up 503
Vibration Measuring System, Noise and 341
Vibration Meter 44
Vibration Recorder 44
Vibration Tester 335
Vibration-measurement Equipment 45
Vibrator, High-power 52
Viscometers for Industrial Process Control, Continuous 701
Viscosimeter 239
Voice Spectrum Visualizer 926
Voltage Divider 600, 706
Voltage Dividers 601
Voltage Multiplier for VTVM, D-c. 64
Voltage Reference for CRO's 246
Voltage Regulator 248
Voltage Regulator, Feeder 718
Voltage Regulator, Instantaneous 409
Voltage Regulator, 400-cycle 927
Voltage Regulators, Special 1130
Voltage Stabilizer 1119
Voltage Standard, A Primary High-frequency 318
Voltage Supply, A-c. 1019
Voltage Transformer, Constant- 1113
Voltage-dividing Resistor 931
Voltage-dividing Resistor, Differential Computing 1132
Volt-ammeter, A-c. Clamp 504
Volt-ammeter, Split-core 1020
Voltmeter, Logarithmic 712
Voltmeter Rectifier, Peak 1022
Voltmeter for TV, FM and Radar, R-f 598
Voltmeter, Vacuum-Tube 336, 508
Voltmeters, Rocket Applications of Electrostatic Generating 1007
Volt-Ohm-Milliammeter 597
Volumeter-feeder, Automatic Intermittent 42
V. U. Instrument Multiplier 64

W

Warp & Pick Counter 516
Water Feeder, Automatic 924
Watthour Meters, Single-phase 1108
Watthour and Thermal Demand Meter, Combination Polyphase 236
Watthour and Thermal Kva Demand Meter, Combination 513
Watthour and Thermal Watt Demand Meter, Combination 44
Waveguide Test Equipment 818
Weather Balloons, Constant-altitude Control 811
Weld Energy Comparator 821
Weld Timer, Sequence 918
Welding Control Combination 154
Welding Controller 819
Weld-time Meter 250
Well-logging Apparatus 1113
When A Feller Needs Control 350, 812, 1013
When a Feller Needs a Friend 232
Wire Fatigue Testing Machine 43
Wire-coating Gage and Automatic Controller 590
Wow Meter, Film-flutter and 412

X

XB-45 Airplane, Instrumentation for Flight Testing the 314
X-ray Dosimeter 828
X-ray Movies Use Radar Idea 69
X-ray Tube, 130-kv. 250
X-Y Recorder, Coordinatograph or 915, 1109

Y

Your Work's Growing Importance 999

Z

Z-Angle Meter 53
Z-Angle Meter, R-f 143
Zeolite Control Valve 63

## Author and Source Index

A

Abrams Instrument Corp. 713
Advance Electric & Relay Co. 833, 835
Air Materiel Command 810
Airborne Instruments Laboratory 1109, 1118
Aircraft Electronics Associates 326, 335, 341
Aircraft Tools, Inc. 717
Airdraulics Engineering, Inc. 337
Airlectron Engineering Company 54
All American Tool & Mfg. Co. 237, 333
Allis-Chalmers Manufacturing Co. 718
American Chain & Cable Company 827, 1026
American Chronoscope Corp. 590
American Gas Accumulator Co. 148
American Machine & Metals, Inc. 238, 500, 501
American Meter Company 917
American Paulin System 702
American Pipe & Steel Corp. 824
American Relay & Controls, Inc. 833, 1133
Ames Company, B. C. 412
Ames Precision Machine Works 240
Amperex Electronic Corp. 1124, 1125, 1136
Amperite Company, Inc. 523
Amplifier Corp. of America 412
Anders Company 43
Annin Company 932
Applied Research Laboratories 238, 701, 1113
Applied Science Corp. 239, 248, 592, 1032
Arma Corporation 591
Assembly Products, Inc. 236, 416, 926
Associated Research, Inc. 60
Atomic Instrument Company 711
Audio Development Company 1118
Audio Instrument Company 600, 712, 832
Aughey, Henry 172
Auld, Hampton M. 395
Austin, Robert R. 588
Automatic Control Company 820, 825
Automatic Electric Company 59
Automatic Electric Sales Corp. 604

B

Bacharach Industrial Instrument Co. 54, 62
Bachman, C. H. 33
Bailey, E. G. 31
Baldwin Locomotive Works 251, 714, 818, 819, 825, 1018, 1110
Barber-Colman Company 1136
Babour-Stockwell Company 517
Barnard, Clayton H. 179
Barr Instrument Company 143
Barry Corporation 44
Bausch & Lomb Optical Co. 333, 701, 919, 1015
Bays & Assocs., Carl A. 1113
Becker, Francis S. 1057
Behar, M. F. 121, 122, 213, 311, 395, 491, 569, 570, 579, 669, 793, 897, 903, 999, 1097
Bellows Company 154
Bendix Aviation Corp. 56, 569, 1108, 1111
Bennett, Willard H. 38
Bergin, Martha J. 320
Berkeley Scientific Co. 510, 512
Beta Electric Corp. 412, 818
Beta Electronics Company 157